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CONTEXT

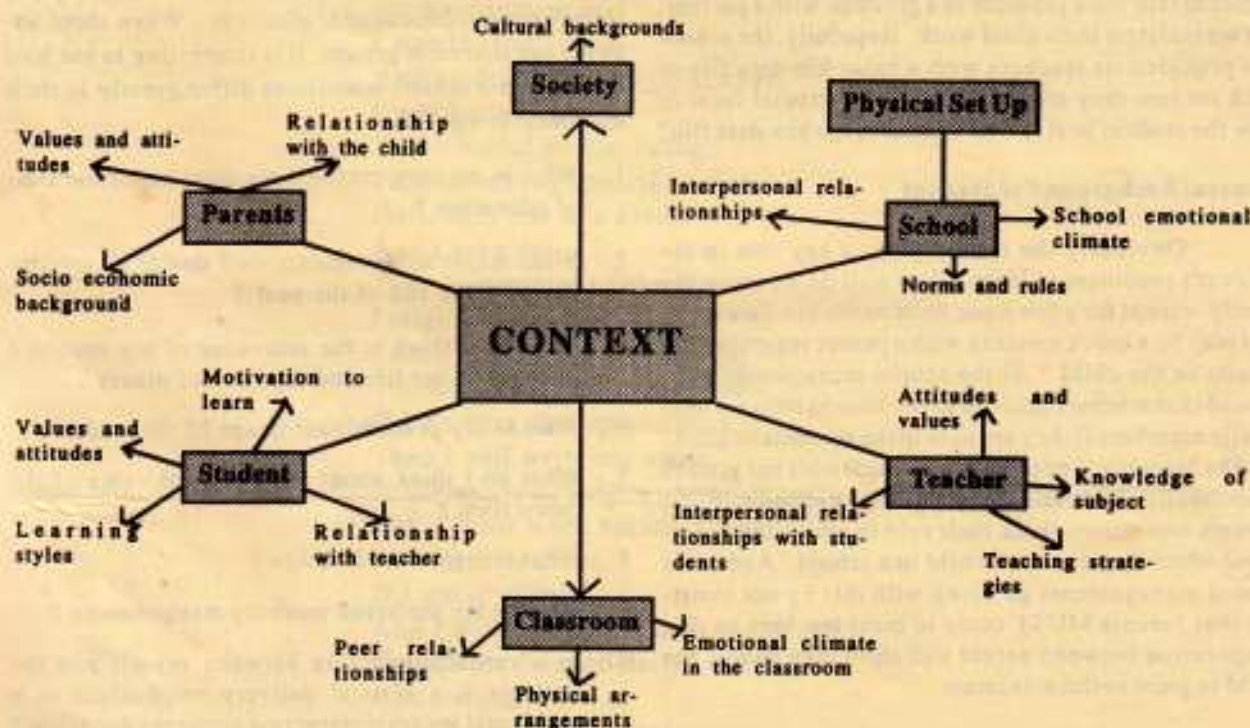
Robert Slattery, S.J.

In the November 95 issue of Pathways, a general introduction was given to 'Integral Pedagogy'. We saw that this pedagogical model has five elements: Context, Experience, Reflection, Action and Evaluation. Let us look at Context in more detail.

Knowledge of the Student

It is an oft repeated maxim that it is more impor-

tant to know the student than to know subject matter. Every student is unique, unique in background, learning style, attitude to schooling etc. Unless we can understand how ready a student is to learn, we will often be unable to engage the student in learning. Every teacher knows this. The practical question is: How can a teacher faced with large classes get to know her students well? And even if she has the tools to get to know the student, when will she get the time?



The context of the child is an interplay of all these factors and more. An understanding of these factors will help the teacher to foster learning in a meaningful way.

Mentoring

Some schools have realized the importance of the teacher knowing, relating personally, to the students and have a mentoring (home room/zero) period regularly in which the class teacher does not deal with any subject matter but has time to allow the students to share their experiences, their talents, to do exercises in groups, to meet the teacher individually. There is also the opportunity, especially with senior students, for the teacher to help the student to draw up his or her own growth profile. This is the product of the student's reflection on how he or she has been growing considering the following areas: intellectual, social, moral, spiritual, personal, and how the student in planning in these areas in the coming year.

Learning Styles

The fact is that a student's learning preference may be auditory, visual, physical. The teacher by observation backed up by a learning style questionnaire can find out the learning style preference. How many of us teachers complain that a student often moves, cannot sit quiet, and we blame him for not paying attention, not realizing that his learning preference is a moving one. Or we have a low opinion of a student's intelligence because she is not paying attention to our long winded lecture, not realizing that the student, in fact most students, do not prefer an auditory mode of teaching/learning. Many of our students prefer to talk out a problem in a group or with a partner; yet we insist on individual work. Hopefully, the school has provided its teachers with a basic bio-data file of each student they are teaching. Is the crucial facts of how the student best learns written in the bio-data file?

General Background of Student

Obviously the family plays a key role in the student's readiness to learn. How well do we know the family, except for a few basic facts on the bio-data form, and may be a quick meeting with a parent regarding the results or the child? Is the school management convinced that teachers must be given time to interact with family members if they are to help the students to learn? And by learning is not meant just academics but growth emotionally, spiritually, morally. It is unfortunate that parents sometimes think their role in education is finished when they put their child in a school. And some school managements go along with this by not insisting that parents MUST come to meet teachers so that cooperation between parent and child may enable the child to grow to the maximum.

General Environment

What is happening outside the school in soci-

ety in general and in the neighbourhood of the child affects her. Bombardment of different values from television, radio, newspapers, magazines, films all have an influence on the child. How much time is spent by the staff in analysing these influences and the school's answer?

The School Climate

A complex and often subtle network of norms, expectations and especially relationships create the atmosphere of the school. The results of recent research suggest that a favourable school climate may well be the precondition necessary before value education can even begin, and that much more attention needs to be given to the school environment in which the moral development of the students takes place. Has the staff analysed the school climate? May be such an exercise will give us a surprise. A questionnaire can easily be drawn up, based on the intended aims of the school, and given to the staff members to answer, discuss, and decide on areas in the school climate that are weak.

Educational Platforms

A teacher comes to a class with her beliefs, opinions, values, knowledge, emotions, aims, motivation etc. All of these have an influence on the teaching-learning process in the class. A teacher is herself part of the context. Below are given 10 questions to help you reflect on you educational platform. When these answers are shared in groups, it is interesting to see how teachers in a school sometimes differ greatly in their approach to education.

1. What in my view are the three most important aims of education?
2. What major achievements do I desire of my students by the end of the year?
3. What do I think is the relevance of my student's learning to her life and the lives of others?
4. What is my predominant image of the students?
5. What do I think about the aims and value of the curriculum?
6. What is my own self image?
7. What is my preferred teaching methodology?
8. In a verbal interaction between myself and the students is a vertical delivery emphasised or a horizontal student interaction under my guidance?
9. What is my preferred kind of teacher-student relationship?

10. What kind of school climate do I prefer,

Classroom Climate

This is surely part of the context of the child's learning and is connected with the educational platforms of the teacher. Does the student feel accepted in my class, by me, by her peers? How do I foster acceptance? What mood do I bring to my class? How do I give questions in class? Do students feel free to ask clarifying questions? Do the students volunteer to answer my questions or wait to be asked? Do the same students always volunteer to answer my questions? Do I use sarcasm in dealing with students? A very profitable discussion can be held among the staff on the most important elements in building up a favourable classroom climate.

Some teachers have the courage to ask for written feedback from the students on how they have appreciated their teaching. They do this after a section of a topic is finished or at the end of a term. The students are told not to sign their names. They may even write in a different way if they feel what they write will be held against them. Asking for feedback gives

the students a feeling of participation in how they are taught and often given the teacher hints on how she can improve.

The Time Priority

To get a good knowledge of a subject to be taught, time must be given and no one disputes this. But it is the same if we are to get to know the context of our teaching. That is when the question will arise: If we give time to this, how will we cover the syllabus? This is where our school and personal priorities will show. Is our covering/teaching the subject matter of the course more important than coming close to the student in order to help her to learn better, to grow according to her talents? And is it really true that if we spend time in getting to know the context, the subject matter will not be covered? After all, who is supposed to cover the subject matter, the teacher or the student? The teacher as an individual can do something to get to know the context better, but the basic challenge is to the school management. For the school management, is the knowledge of the context of the student, and the personal care of the student's all round growth, a top priority or not?

THE SELF-ESTEEM CREDO

God made me - I was no accident,
No happenstance.
I was in God's plan.
And he doesn't make junk, ever.
I was born to be
A successful human being,
I am somebody special unique,
Definitely one of a kind,
And I love me.
That is essential so that
I might love you, too.
I have talents, potentials, yes,
There is greatness in me, and
If I harness that specialness,
Then I will write my name
In the sands of time with my deeds.
Yes. I must work harder, longer,
With greater drive,
If I am to excel,
And I will pay that price,
For talents demand daily care,
And honing.
I was born in God's image
and likeness
And I will strive to do God's will.

Art Fettig.

EDUCATION - IN ACTION

Ms. Lucy Kurian
St. Francis De Sales S. Sec. School
A4-C Janakpuri, New Delhi 110058.

Seventeen years ago a germ of an idea in a visionary took the form of mushrooming tents in A-4C Janakpuri. Today, the red brick edifice of St. Francis De Sales School stands testimony to that vision of providing human and moral values and education to the children of the locality. The well planned curricular and co-curricular activities with great emphasis on discipline have helped mould youngsters to reach out and fit into the prestigious niches in society with great aplomb.

A peep into this temple of learning reveals a Pre-Primary Section at C1 Janakpuri where tiny tots are enfolded into an atmosphere of so much fun and excitement in the presence of caring and lovingly patient teachers. Its a tiny world of happiness and security where learning comes very naturally without coercion.

The portals of the main school where you have the students of Class 1 to 12 open into a well laid out garden, roomy well-lit class rooms with close circuit T.V., clean shiny corridors, the luxury of clean and cool drinking water and hygienic toilets on each floor (2 floors), a library which caters to all sections of the school with the latest books and information, well-equipped and spacious laboratories, a beautiful auditorium with the latest in sound system, ample place for sports and games and the facilities of a good canteen for a sumptuous repast. All this speaks volumes of the careful foresight and planning that went into the formation of this institution.

The planning of the curricular format is in line with the CBSE and aided by a formal examination system ensures a balanced method of learning. The variety of co-curricular and extra-curricular activities that are planned for the academic year prove a launching pad for the interests of the 3000 odd students of the school and it involves mass participation. The Inter House Competitions at various levels evince keen interest and hone talents which initiate healthy competition and an air of confidence. Creativity find expressions in the Inter-Class Class Magazine Contest. T.V. Programme and Bulletin Board competitions which really help students to specialise and exhibit their identity in a variety of innovative ways. The Students Leadership Squad (SLS) provide the elected students opportunities to develop initiative, shoulder responsibility with accountability and rise to face a crisis, if any. The student leaders of yesterday are doing themselves proud in different walks of life today. The SLS from time to time take up small

little campaigns and execute it to perfection - like in the year 1995-96. "Cleanliness Drive" meant much more than mere words or slogans. Spearheaded by the SLS each and every member of the student body ensured the credibility of the scheme.

Inter-School forays into competitions, quiz programmes, newspaper in education activities, NCC, Seminar and Symposiums have enriched and widened the horizons of our students besides their stellar achievements.

Social issues are held in top priority and one works for it through participation in Marches, 'Signature Campaigns' and holding 'Bal Mela' to generate funds for special causes - like the construction of a home for the homeless, the erection of galleries and the present need of building more classrooms to accommodate the increasing number of students.

However, the main thrust of Social Concern has been two-pronged. The Hindi Medium Section and the Non Formal Section - the two pulsating and living examples of love and concern for those who lack ability or opportunity. These two areas are maintained most effectively and efficiently through the funds generated from the English Medium Section and its activities like the Bal Mela.

The Hindi Medium Section which runs in the same premises during the afternoons have qualified and caring staff who have raised the standard of the students intellectually as well as morally to a high level of achievement and confidence - so much so that they compete very well with the students of the English Medium - a perfect role model of Social Upliftment !

The Non Formal Section in SFS' mantle of love for the lesser privileged. Running alongside the English Medium Section, it caters to the needy students by providing courses in Typing, Textile Designing, Stenography or Tailoring so that they may earn a decent living. In addition the "pride of place" is the social Service Centre called 'SFS Seva Sadan' at Sitapuri Phase II, a rural zone, which runs from 9.00 a.m. to 4.00 p.m. This centre has an adult education programme for woman, tailoring classes for adolescent girls and from 2.00 p.m. to 4.00 p.m. it is supervised study for poor children of the area who go to government schools.

A tribute to the school is the presence of an Ex students Association 'SAHODAY' which reaches out and cares for those in distress and are helpless by providing financial help, or books and uniforms and awards for meritorious students.

The Motto of the school "Knowledge, Service and Charity" form the three main avenues for reaching out, strengthening one's self and the others and touching God's people.

TO MAKE YOU A MORE LIKEABLE PERSON

10 Commandments of Human Relations

- 1. Speak to people. There is nothing as nice as a cheerful word.**
- 2. Smile at people. It takes 72 muscles to frown, but 14 to smile.**
- 3. Call people by name. The sweetest music to anyone's ear is the sound of his name.**
- 4. Be friendly and helpful. If you have friends, be friendly.**
- 5. Be cordial. Speak and act as if everything you do were pleasure.**
- 6. Be genuinely interested in people. You can like everybody if you try.**
- 7. Be generous with praise, caution with criticism.**
- 8. Be considerate to the feelings of others. It will be appreciated.**
- 9. Be thoughtful about the opinions of others. There are three sides to a controversy - yours, the other fellow's and the right one.**
- 10. Be alert to give service. What counts in life is what we do for others.**

(Extract : Catalyst, August 1994)

SILENCE PLEASE ! KEEP QUIET

These are few words that we hear in almost every class pronounced by every teacher every day a number of times. By asking the children to be silent and keep quiet, what the teacher usually means is to attend to the topic that is being taught. It is found that his cry usually goes unheeded and the teacher gets frustrated. This happens usually because the teacher has not used the necessary tools to gain attention of the class. To control the attention of the children, the teacher has to be aware of the technics for attention control and help the children also to control their attention to what is being taught.

Attention control practice helps the children with a way of monitoring their attention level and raising it when needed. Attention control is an intense and powerful experience. One thing to be realised is

that a person can focus his attention only on one stimulus at a time. But at a given time we are bombarded with a variety of stimuli in the form of physical sensation, thoughts and emotions. In spite of the bombardment of numerous stimuli, we are aware of only some of these which we consciously choose to attend. We have the freedom to choose certain stimuli. This allows us to increase or decrease our attention to any particular set of stimuli we want to.

We have so many experiences around us where some people are able to raise their level of attention so much to a particular stimuli that they forget their world around them. Examples of scientists, mathematicians, athletes, historians are plenty that they are so much involved in their work that they forget meals, time of the day and so on. These people have raised their attention

level on a particular area so high that they block out all other forms of stimuli that bombard them all the time.

If we want to teach the students to control their attention to the stimuli that we are providing, they have to be taught to become aware of (a) their level of attention (b) the level of attention needed for the task at hand (c) their ability to compare the present level of attention to that is required for the task (d) their ability to raise their level of attention by raising their energy, block out the unnecessary stimuli and finding meaning in what they are attending to.

We can increase or decrease the levels of energy at will. This physical energy is seen to be increased and decreased by the posture of working. Some people are found to be taking short breaths when they are fully involved in certain activity and some other are found to be tensing some muscles of their body when absorbed in some task.

When a child is preparing for his maths exam for the next day, he cannot afford to be thinking of the cricket match he has to take part next week. This will definitely affect his mathematics studies and the poor performance in Maths and subsequent building up of low self esteem may affect his cricket performance too. So the child has to learn the need of blocking out the cricket thoughts while he is busy with mathematics. This implies that we have to train the child to focus his thinking on one thing at a time. This process is technically called bracketing of thoughts.

In order to raise the attention level, the child has to find a meaning (a personal meaning) for the task. What has that task to do with his life. This personal meaning creates an interest. He must be asking what do I know about this. How is the present task connected to what I know. What am I trying to learn?

Helping the child to raise the level of attention will help the child and the teacher. It helps the child to (a) do well any task (b) will improve the quality of teaching-learning process (c) develop self discipline.

The teacher's objective is to help the children aware of their level of attention, the level of attention required of the task, compare the present level with that is required, and helping the child to raise the level of attention by raising the energy, blocking other stimuli and help him to find meaning in their task.

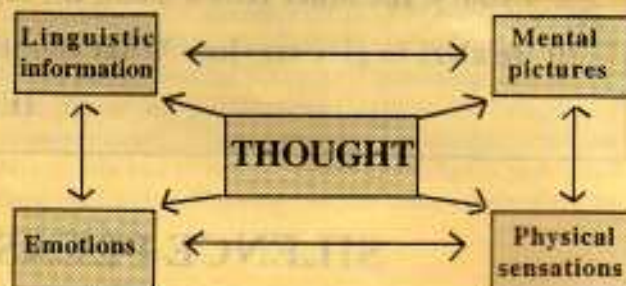
Now when the teacher is teaching a particular topic, ask them to go through this processes of being aware of their present attention level and so on.

When a child is fully involved in any task be it skill learning or content learning, the child is thinking.

This thinking is nothing but generating mental pictures, sensations, emotions and linguistic information about a thought. In order to get full attention to the task the children are involved in or the teacher is teaching, the children have to involve themselves in thinking process. The deeper their thinking process, the greater is the attention level.

Hence the teacher has to be alert in providing the mental pictures, sensations, emotions and linguistic information to the children. When we think, we picture some event, person, object, or place in our mind, we also feel the physical sensations to the above and feel emotions about them and we discuss in our minds or with others about them. For example if we are thinking about the party we attended last week, we mentally picture the scene of the party, the decorations, the people who attended, the food we had, you can feel the sensations such as the smell of dishes, the colours of the decorations, the comfort of discomfort of the chair you sat, the taste of the food and so on. You can even feel the joy and happiness of meeting some of your friends. You are knowingly or unknowingly giving linguistic expressions about the party in your mind or describing it to some one.

Hence a thought is an interplay of all these components.



In order to train the children for raising and lowering their level of attention, it will be good to train them in this process of raising and lowering the attention levels. This could be done by various exercises.

1. The teacher shares with the child some occasions what the teacher himself has raised his attention level to the maximum blocking out all other thoughts from the mind. Give examples of the distinguished poets, actors, athletes, scientists, historians and even ordinary people raise their attention level to the highest by raising their energy level, blocking other forms of stimuli and finding meaning for their task in their life.
2. Ask the students to focus their attention to a given stimuli (a spot on the black board, a butterfly moving in the gardens) for a minute or two. Help them to recognise what is happening to them physically,

emotionally even cognitively when they are really trying to focus their attention on just one stimuli. Let them discuss and share their experiences with other children in small groups. This will help them to realise their own physical, emotional and cognitive behaviours when they raised their attention level.

3. You may repeat these kind of activities with children asking them each time (a) to be aware of their physical characteristics associated with raising or lowering of attention level. This will help them to adopt such postures or movements, control of breath etc. when they want to raise or lower their attention level in a particular task. (b) ask the children to recognise the thoughts or stimuli that were interfering with their attention level. How did they manage to block them for some time. Ask them to find out some thoughts they have to block when they are studying a particular topic. (c) ask them to find a meaning for the stimuli they are attending to e.g. a spot on the black board may be a star in the sky which I want to reach or a bird in the sky like whom I want to fly or anything else.

A good teacher who understands the value of raising the level of attention of the children is a manager

of the thought process of the children. He who can get the children into deeper thought levels need not call out "silence please and be quiet". He knows how to create mental images of the topic he is teaching by providing pictures words e.g. instead of saying 'he walked on to the stage' he state "He staggered on to the stage taking one step at a time". The teacher may even act out the scene of staggering on to the stage. He will use audio visual aids, practical work with concrete objects. He will involve the students to manipulate objects, act out scenes etc. to give the physical sensations about the topic. He will arouse their emotions attached to the topic or the joy and happiness of achieving the target learning. He will encourage the children to discuss between them the thoughts they had gone through while learning the topic. He will encourage them to process their thoughts by drawing symbols pictures of what they learned, write a personal journal of the essence of learning from the lesson.

Raise the level of attention

and

engage them in rich thoughts.

A man is educated who knows how to make a tool of every faculty, how to keep it sharp, and how to apply it to all practical purposes.

Henry Ward Beecher

WHAT IS YOUR LEARNING STYLE ?

What is the learning style of your class.

Here is are learning style inventory. You may try it yourself and find out your own learning style. You may try this questionnaire for the whole class and find out what is the predominant learning style of your class of children. It may help you to change your teaching-learning strategies in the class room.

Please answer each question honestly. Answer according to what you do now, not what you think the right answer is.

Use the following scale to answer each question. Circle your answer.

Please answer each. 1 = never, 2 = rarely, 3 = occasionally, 4 = usually, 5 = always.

- | | | | | | |
|---|---|---|---|---|---|
| 1. I find it helpful to trace over or write words when I have to memorise them. | 1 | 2 | 3 | 4 | 5 |
| 2. I remember more about a subject when I listen to a lecture than when I read the textbook. | 1 | 2 | 3 | 4 | 5 |
| 3. I prefer classes that require me to be tested on what you read in the textbook. | 1 | 2 | 3 | 4 | 5 |
| 4. I like to eat, chew, etc., when I study. | 1 | 2 | 3 | 4 | 5 |
| 5. When I pay close attention to a lecture, I can remember the major points without writing them down. | 1 | 2 | 3 | 4 | 5 |
| 6. I prefer written directions to oral directions. | 1 | 2 | 3 | 4 | 5 |
| 7. I am good at working jigsaw puzzles and mazes. | 1 | 2 | 3 | 4 | 5 |
| 8. I prefer classes that require me to be tested on the material that is presented during a lecture. | 1 | 2 | 3 | 4 | 5 |
| 9. I find slides, film strips and movies helpful for understanding a subject. | 1 | 2 | 3 | 4 | 5 |
| 10. I remember more when I read a book than when I listen to a lecture. | 1 | 2 | 3 | 4 | 5 |
| 11. I usually need to write down telephone numbers to remember them. | 1 | 2 | 3 | 4 | 5 |
| 12. I prefer to get the news by listening to the radio rather than reading a newspaper. | 1 | 2 | 3 | 4 | 5 |
| 13. I like to have something like a pen or pencil in my hand when I study. | 1 | 2 | 3 | 4 | 5 |
| 14. I need to copy the teacher's examples from the blackboard so that I can look them over later on. | 1 | 2 | 3 | 4 | 5 |
| 15. I prefer the teacher's oral directions to those written on a test or on the board. | 1 | 2 | 3 | 4 | 5 |
| 16. I like a textbook to have charts, graphs and pictures because it helps me to understand the material better. | 1 | 2 | 3 | 4 | 5 |
| 17. I like to listen to tapes or records when learning a play, short story, etc. | 1 | 2 | 3 | 4 | 5 |
| 18. I must write down lists of things I have to do to remember them. | 1 | 2 | 3 | 4 | 5 |
| 19. I can proof read my work by simply looking it over and finding most of my mistake. | 1 | 2 | 3 | 4 | 5 |
| 20. I would rather read the newspaper than listen to the news. | 1 | 2 | 3 | 4 | 5 |
| 21. I can remember telephone numbers when I hear them. | 1 | 2 | 3 | 4 | 5 |
| 22. I enjoy doing work that requires me to use my hands or tools. | 1 | 2 | 3 | 4 | 5 |
| 23. When I write something, it is necessary for me to read it out loud so I can hear how it sounds. | 1 | 2 | 3 | 4 | 5 |
| 24. I remember things better when I can move around while I am learning them, e.g. walking while studying, playing a game that requires one to move around in a classroom, etc. | 1 | 2 | 3 | 4 | 5 |

Directions for scoring

For each question you will find an unshaded box in one of the three columns labelled visual, auditory or physical learning preference. For each question place the number you circled while doing the inventory in the unshaded box. After you have recorded the number for all 24 questions, you will total each column to find out what the strength of your learning preferences are for the visual auditory, and kinesthetic learning channels.

LEARNING STYLE INVENTORY SCORING			
QUESTION NUMBER	VISUAL LEARNING PREFERENCE	AUDITORY LEARNING PREFERENCE	PHYSICAL (KINESTHETIC) LEARNING PREFERENCE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
Total			

For example, a student who has the following scores

VISUAL LEARNING PREFERENCE SCORE = 23

AUDITORY LEARNING PREFERENCE SCORE = 19

PHYSICAL LEARNING PREFERENCE SCORE = 25

is most probably a physical learner with a fairly well developed visual learning channel. His last preferred learning channel is auditory. One should always verify the results of the brief inventory with discussion and observation of the student.

LEARNING STYLE REVIEW SHEET

VISUAL LEARNERS

- * 40 to 50 per cent of the general population
 - * learns by seeing the material
 - * videos, filmstrips, computer programs enhance learning
 - * visual representations of the material, such as graphs, tables, charts, diagrams enhance learning
 - * may best remember what is read rather than what is listened
 - * most efficient way to store information is visual.
1. What do I already do in my regular teaching that appeals to visual learners ?
 2. What percentage of my typical class period appeals to a visual learning style ?
 3. What visual teaching/learning techniques do I find work well with my students ?
 4. Do I have any visual teaching technique that I consider to be unusual and effective ?
 5. If I am a visual learner, what are the two or three visual learning techniques do I find most beneficial for me in a learning situation ?

AUDITORY LEARNERS

- * 10 to 20 per cent of the general population
 - * learns by listening the material
 - * audio tapes, records, etc. will enhance learning
 - * may best remember what is listened to rather than what is read
 - * pure auditory storage of material is a much less efficient way to store information than visually. Usually auditory learners do some type of transfer of information to a visual storage system.
1. What do I already do in my regular teaching that appeals to auditory learners ?
 2. What percentage of my typical class period appeals to an auditory learning style ?
 3. What auditory teaching techniques do I find work well with my students ?
 4. Do I have any auditory teaching technique that I consider to be unusual and effective ?
 5. If I am an auditory learner, what are the two or three auditory learning techniques do I find most beneficial for me in a learning situation ?

KINESTHETIC LEARNERS (Physical learners)

- * 20 to 50 per cent of the general population. This percentage is found to be higher in male population.

- * learns by physically interacting with the material
 - * is in continual motion with hands, feet, etc. moving. Will doodle much of the time.
 - * time on task is limited with the need for frequent breaks.
 - * least efficient way to store academic information, best way to store athletic and artistic information. Needs to learn visual storage to become a more efficient learner.
1. What do I already do in my regular teaching that appeals to kinesthetic learners ?
 2. What percentage of my typical class period appeals to a kinesthetic learning style ?
 3. What kinesthetic teaching/learning techniques do I find work well with my students ?
 4. Do I have any kinesthetic teaching technique that I consider to be unusual and effective ?
 5. If I am a kinesthetic learner, what are the two or three kinesthetic learning techniques that I find most beneficial for me in a learning situation ?

ENVIRONMENTAL STUDIES AND ITS PRACTICE

The main concern of curriculum in a primary school are language, mathematics and creative arts and necessary social skills (interpersonal, emotional, spiritual and moral) and physical education. Other less defined interests are social studies-history, geography, civics and science representing people, places and objects.

Environmental studies is regarded as an approach to a curriculum rather than a subject to be taught and learned. The relevance to environmental studies as a subject is difficult to maintain. If it is considered as a school subject, it must have a well defined body of knowledge and consequently a particular method of enquiry. The field of information into which children can be taken through environmental studies is so extensive that the information content of environmental studies cannot be defined.

The characteristics of the method of environmental studies include 1) direct observation 2) recording of physical and social phenomena 3) experimentation in physical and social worlds, 4) communication of results. This is predominantly an enquiry method.

At primary age, the division of curriculum on a subject basis is not advisable. Children who view their world as an integrated world cannot grasp the relevance of subject divisions. What we need to provide children is method to help them to view the world in a wholesome manner, help them to see what lies around them and introduce them to a variety of methods of studying and communicating their observations. If environmental studies is used as a method, we can make a significant contribution to the total curriculum.

When curricula is subject-divided, environmental studies approach cannot be easily adopted. A curriculum built around a number of broad fields of study in which the so called subjects interplay is considered the best for this enquiry approach.

The environmental studies approach is based on extensive range of skills. The basic skills are language, mathematics and creative arts. In today's world, if a child have to survive and learn further to make him a life long learner, he has to have proper study skills. The study skills involve 1) collection and classification of all types of physical and social data 2) formulating and conducting tests and experiments 3) mapping and graphing 4) interpreting photographs and sketches 5) preparation and presentation of interviews and questionnaires.

The core skills of environmental studies are the study skills. The language, mathematics and creative art permeates. It should in no way reduce language standards of the children. It should help them to develop precision of language and stimulate creative writing.

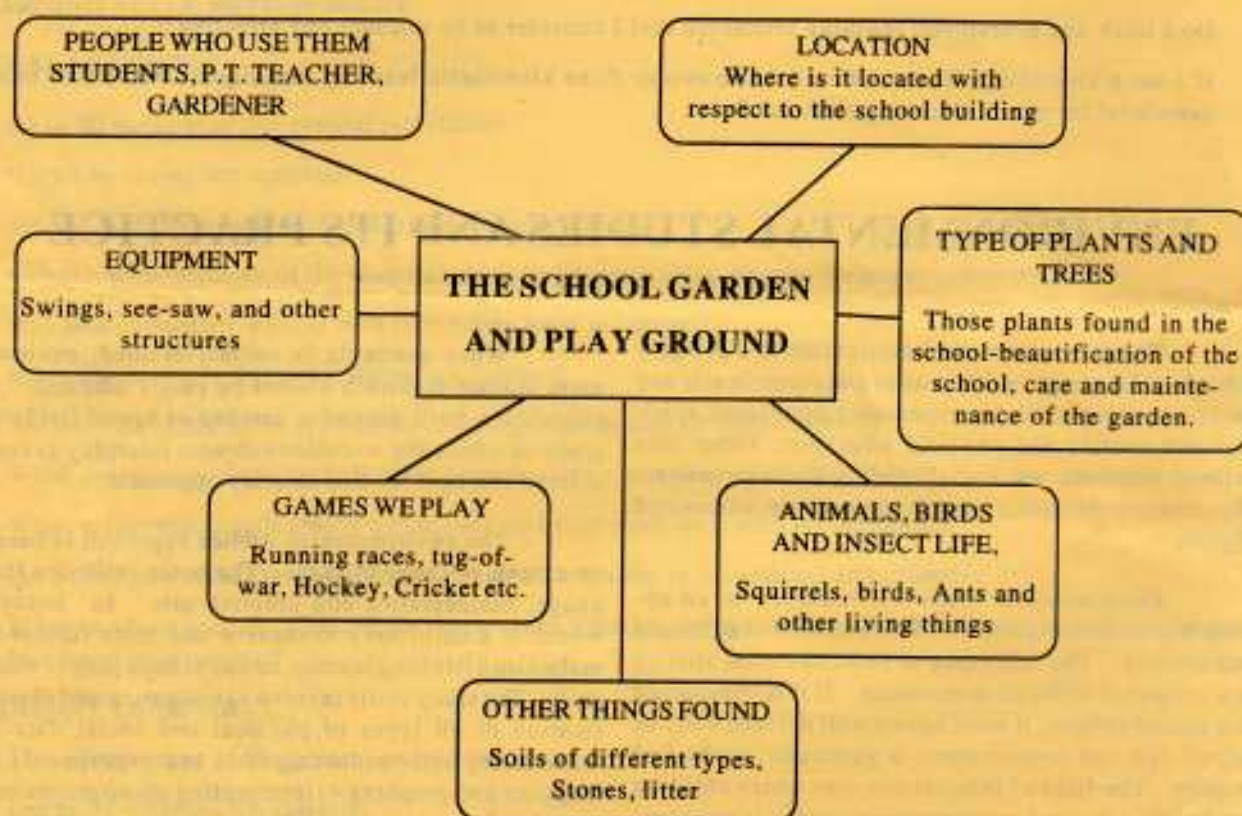
The third category and an important one at that is the growth of social skills. The growth of responsibility and initiative, ability to fit in with a group, giving and accepting criticism and respect for people and the physical environment can all be helped by activities in this approach.

A sample of a lesson structure is given below.

The first pre-requisite is that the teacher should

observe the local environment carefully and make herself or himself completely familiar with the objects, events and other opportunities available therein, on which environmental studies activities for the children may be planned.

The starting point would be a preparing a web-chart which outlines the content of the topic which the children are going to work on. A sample of this web chart is given here.



At the time of making such a web chart, it is useful if two or three teachers sit together and share ideas. Initially, this web chart will no doubt appear too large and extensive to be covered. Based on the interest of the children and the time available, the teacher may decide to work on only certain selected portions of this web chart.

After making this web chart, the teacher begins to write down a list of possible activities, keeping in mind the several skills that he/she seeks to develop in the children through these activities. The skills to be kept in mind are language, mathematics, creative skills, social skills and several study skills. An analysis of the learning outcomes of each of the activities planned, is helpful at this stage. This list of several activities planned may be classified according to the major skills developed by each of them and is sometimes referred as

a skill chart. A sample of such a skill chart is given here. Note that these activities lead to the development of skills in several areas. Environmental studies is an integrated approach and in writing the skill chart, the main skills are the ones which have to be kept in mind.

SOME POSSIBLE ACTIVITIES:

Language development:

- i) Writing a poem about the sounds heard in the

garden.

- ii) Make a list of all green things seen and write short phrases describing them: example; a tender green shoots of a tree, bright green print on my teacher's saree, dark green wooden windows etc.
- iii) Interview the P.T. Teacher of your school and find out how many types of games are played in the school, what is the need of such games, why we must have regular exercise, is it necessary for us to do exercises as well as play games, is there any other way in which games help us -beyond building up our bodies, write down what you have learnt.
- iv) Interview the gardener of your school and find out about him - his name, where he comes from, how big is his family, do his sons go to school, will they also

become gardeners? Does he like his job? How long has he been in the school? Write down what you found out. If you like you may draw pictures too.

Mathematics:

Sorting of leaves, stones, etc. into groups (sets) according to colour, shape, size, in groups of five etc.

Addition and subtraction sums on objects found in the play ground. Finding and comparing objects leading to an understanding of mathematical concepts - more than, less than, equals, larger and smaller, wider and narrower.

Leaf prints on squared paper - concept of area.

Looking for shapes in buildings around the playground - counting how many there are of each kind, graphical representation of these (pictograph or column graph).

Sums on money - expenses connected with maintaining the garden, cost of seeds, manure, purchase of equipment.

A tree survey - find out the different kinds and draw a pictograph using one symbol for each kind - a column graph is also possible.

Number of children using the playground during each period - bar graph - which was most, which the least, when were there none?

Preferences of students for different types of games - graph.

Creative Skills:

Pressing and drying of leaves and flowers

Flower arrangements in the classroom

Collage of leaf or bark rubbings

Making of leaf plates and cups

Cooking - if vegetables are grown in the garden, exchanging recipes.

Collection, Grouping, Classification

Collection of leaves of different types - classification according to colour, size (large, medium, small); shape (long, round, oval); smell (with and without); type of plant (shrub, tree, flowering, non-flowering, creeper, etc.)

Marking off an area of one square metre on the ground and listing all living and non-living things seen

there - use of a magnifying glass.

Listing the different materials seen in the buildings around the garden - sand, cement, bricks, steel, aluminium, etc. Classifying these in various ways.

Collection of stones, bits of paper, bark and such things - classification into those that float and those that sink - actual try-out in water.

Listening to sounds in the garden - classify in many ways.

Experimentation:

Growing of seeds in the school garden, maintenance of daily record of growth, the effect of sun, moisture and fertilizer.

Plants absorb water through their stems - classroom experiment using coloured water.

Measure distances of two students from the centre of a see-saw and measure their weights. Which one was closer? What can you find out about the relationship between the weight of the student and the distance?

Make a guess (estimation) of how far you can roll a ball along the ground. Measure how far it actually goes when you do this (measuring). Repeat a number of times and find the average. What happens when it is rolled on different types of surfaces (polished floor, concrete, grass).

Compare rates of filtration of water through different types of soil, gravel and sand available in the school. Time this (use a stop clock) and draw a graph of results. Find out why sand is used to filter water.

Estimate time taken by different people to run a given distance, measure and find difference. How does the time change if they walk?

Guess how many paces you would take to walk once around the basketball court. Ask a friend to do the same. Each of you should then perform the experiment and see whose guess is more accurate. Did you get the same answers? Why? (Need for standard unit of measurement)

Mapping:

Location of a particular tree

Route Map

Plan of Garden

Reference Work

Find out the uses of the different trees - neem, coconut, palm, euclayptus.

Legends connected with trees - the peepal tree.

History of development of games in India - chess, kho-kho.

Cricket scores - world records.

Compare your modern school building with other older buildings nearby - the difference in the materials used, the design of the buildings, their functions.

Social Skills :

Collecting the litter found on the playground at the end of the Tea-Break provides an effective way of teaching children to throw waste paper in the bin, not to throw left-over food in the grounds etc.

Perhaps a small collection of food could be made on any one day and shared with less affluent children who need that food.

NOTE: THIS IS NOT A COMPLETE LIST OF ACTIVITIES - MERELY A SAMPLE OF POSSIBILITIES. CHOOSE WHAT IS WITHIN THE GRASP OF THE CLASS AND WHAT IS SUITABLE TO THEIR AGE GROUP AND THE ACTUAL CONDITIONS IN YOUR SCHOOL GARDEN.

This type of topic study based on the environment is not intended to totally replace traditional lessons. It could be linked up with them. For example reading could be done as part of reference work for the topic study; writing essays could be replaced by factual or imaginative writing on the topic chosen. Some mathematical concepts could be first understood by activities linked with the environment and reinforced by further practice. All the exercises in language development should be tried out both in English and in Hindi/regional language. This helps to make the latter more meaningful especially when it is a 'subject' rather than a medium of instruction. It would be helpful if some time could be set apart weekly for the topic study when teachers are free to exercise their imagination and initiative unhampered by the demands of a textbook or syllabus. With practice they will find many more ways of linking the matter in their textbooks with the world of the child.

It is suggested that before using any of the activities given in the pages that follow, a teacher should read through them carefully, analyse them to

find out what skills are involved, and also look for further follow-up activities suitable to her class. Many activities can give rise to more than one skill and allow for additional related work.

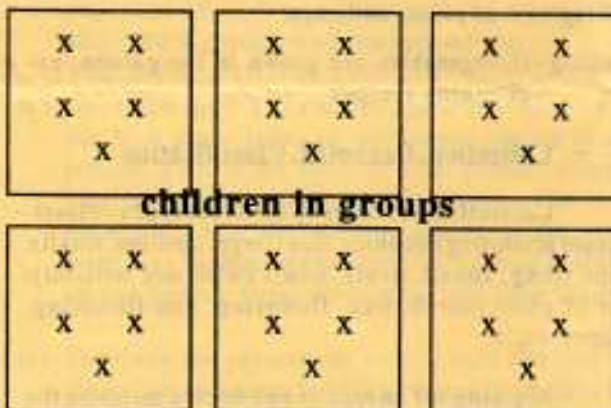
What To Do In Class ?

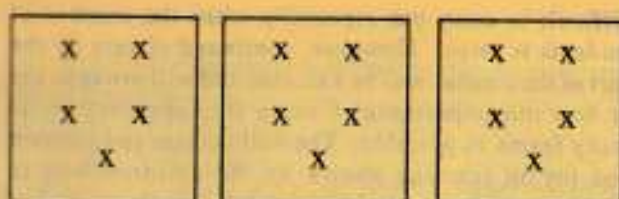
In the case of very young children, conversation and discussion immediately after the activity are absolutely essential. These children do not have writing capabilities. Their reports may be presented in the form of oral discussions or through pictures. When they describe what they have done, what they have seen or heard or made, their vocabulary and knowledge of the language increases.

Older children of classes 3, 4 and 5 can read and write. They may choose to describe their activities in the form of simple sentences accompanied by suitable illustrations. Classes 4 and 5 have children who are old enough to draw simple graphs and maps and this is another form of recording information. Obviously, this kind of recording will be carried out only after they have been taught these skills. But these children too would benefit immensely from being allowed to discuss their activities both among themselves and with their teacher.

What should the teacher do after having carried out the initial planning for an environmental studies topic ? To make her job easier, the children are best divided into small groups. It may be that the children could sit around a small table and thereby have greater freedom to interact with each other. Where such furniture is not available, groups may sit on the floor, whether inside the classroom or outside. It is possible that initially for 2 or 3 sessions, the children may talk more than usual. Thereafter, once they get used to this seating arrangement and involved in their work, they are fully occupied and the noise level will not prove disturbing.

TEACHER





- I. If the teacher wishes, then one of the groups may carry out environmental studies activities while others are involved in routine exercises based on language, mathematics, etc. This will allow the teacher to pay greater attention to the children who are involved in environment-based activities. This is also an opportunity to give more attention to the slightly less able students. Rotation of work between the three groups will allow all of them to carry out the activities, without losing out on practice in other subjects.
- II. If the entire class is involved in environmental studies, then group A may perhaps be doing activities involving them in the making of graphs, group B may be carrying out interviews, while group C may be doing a survey of the trees in the garden. In other words, the three sections of the class may be involved in three separate environment-based activities.
- III. A third possibility exists especially with older children. Each group in the class may choose to work on one particular sub-part of the overall web chart, carrying out activities which deal with a wide range of skills. For example, in the web chart given earlier, one group may work only on trees and plants in the garden, another may work on soil, stones and building materials etc. When the activities are complete, the children should share their information and findings with each other. They may be in the form of conversation, discussions and presentations of written work, poetry, pictures, graphs, maps and other creative activities.

While it is possible that within the groups, children may work separately, in the interest of developing cooperation, it is good for them to learn to work together. Sometimes, it is helpful to allocate different roles to each of the children in the group. For example, there may be a group leader, two children may choose to interview a subject, others may draw pictures, yet others may cut and paste, mount and present their material.

In the case of children of classes 4 and 5 the teacher will often find it possible to use work cards. On these cards the activity is described in simple clear sentences which indicates to the children exactly what they are required to do. These work cards are distrib-

uted in the class as in accordance with the pre-planning of the teacher, the children are allocated different areas of work. **The work cards must, however, be prepared in advance.** The advantage of having such work cards is that they may be used repeatedly and rotated amongst the different sections of the class.

It is important for the teacher to select such activities which will hold the interest of the children and which will keep them occupied for an adequate duration of time. If the children finish the work too soon, they tend to get bored, become negligent about reporting and recording their work, and thereby the entire exercise becomes meaningless. Similarly, before taking children out of the classroom for any activity, they must be carefully briefed by the teacher. The children should know and understand exactly what they are required to do when they have left the classroom. They should know for example, what things they will need to take with them, what kind of things they have to collect, what observations they are to make and in how much time.

In some schools, the time table sets apart a separate time each week for environmental studies. In such institutions, a topical environment-based activities approach, which is not bound by the restrictions of a textbook or syllabus, is easily carried out. The ideal situation is one such, and the teacher may plan for a most fruitful use of such time, the only limitations being her or his own ideas, and imagination.

However, this is not usually what happens. Examinations, syllabus and the demands of the school system require the teacher to carry out environmental studies in spite of several handicaps. Even in such a situations much may be done. The web chart can be made out on a common topic which often forms part of the syllabus - for example: water, air, transport, etc. Then language activities may be carried out during the language period. Similarly at least some activities relating to mathematics and creative arts may be fitted in during the appropriate periods available in the regular time table. With a little encouragement from the administration and perhaps a little cooperation from other colleagues, like art or games teachers, it may be possible to involve the children in several small activities. These should aim to inculcate the study skills in them and may not be strictly required by the prescribed syllabus. For example, it may be possible while studying the topic "transport" in social studies, to carry out a survey of traffic near the school gate and to make a graph of the same. Likewise when studying living and non-living things in science, it may be possible to carry out an observation exercise on such things using the school garden as a base. The objects may be listed, classified, described and data collected may even be

put into a graph.

In the beginning, teachers might feel, during their initial attempts, that unlike the traditional forms of studies where children are usually given information, this form of teaching is more complex and involves them in several hours of planning; that it is

difficult to carry out especially when the number of students is large. However, continued efforts on the part of the teacher will be valuable and will prove to her or him the importance of using this approach in as many forms as possible. The enthusiasm and interest and joy in learning shown by the children will in itself prove a valuable reward for the teacher.

MEASUREMENT IN GEOMETRY

Using units, square units and cubic units

All geometric figures are one dimensional, two-dimensional, or three-dimensional.

You can use **units** to measure the length of a **one-dimensional** figure.

Lines, rays, and the line segments are **one-dimensional**.

You can use **square units** to measure the area of a **two-dimensional** figure.

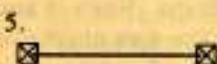
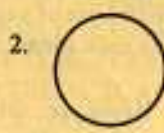
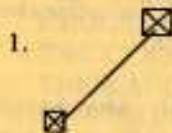
Circles and polygons are **two-dimensional**.

You can use **cubic units** to measure the volume of a **three-dimensional** figure.

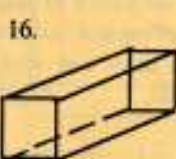
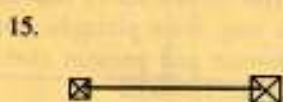
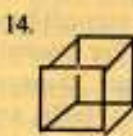
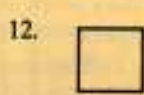
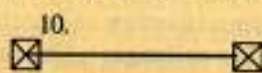
Solid figures are **three-dimensional**.



How many **dimensions** does each figure have? Write one, two, or three.



Underline figures that could be measured using **units**. Ring figures that could be measured using **square units**. Draw a box around figures that could be measured using **cubic units**.



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